

WHAT IS CLAIMED IS:

1 1. In an optical network having a plurality of interconnected nodes,
2 each node capable of selectively switching optical signals in a first wavelength channel
3 and an input fiber and to any one of a plurality of wavelength channels and output fibers,
4 a method of restoring connection between said nodes upon a failure of said network, said
5 method comprising
6 maintaining at each of said nodes a synchronized database of network
7 connections between said nodes;
8 sending messages to other nodes to initiate restoration operations by a
9 node noticing said failure; and
10 recalculating network connections around said failure by each node from a
11 synchronized database at said node.

1 2. The method of claim 1 wherein said recalculating network
2 connections step is performed independently by each node.

1 3. The method of claim 2 wherein said synchronized database
2 maintaining step comprises
3 accepting results of said recalculating network connections at all of said
4 interconnected nodes of said optical network; or
5 rejecting said results of said recalculation steps at all of said
6 interconnected nodes of said optical network if one or more nodes do not complete said
7 recalculation network connections step successfully.

1 4. The method of claim 3 wherein said accepting results substep is
2 performed upon acknowledgment by each node of successful completion of said
3 recalculation network connections step.

1 5. The method of claim 4 wherein successful completion of said
2 recalculation network connections step is acknowledged by transmitting an
3 acknowledgment message to said node noticing said failure, said node transmitting a
4 message to all other of said interconnected nodes of said optical network to update
5 databases of said interconnected nodes of said optical network with said results.

1 6. The method of claim 3 wherein said rejecting results substep is
2 performed by lack of acknowledgment by one or more nodes of successful completion of
3 said recalculation network connections step.

1 7. The method of claim 6 wherein said node noticing said failure
2 transmitting a message to all other of said interconnected nodes of said optical network to
3 abort said results.

1 / 8. A fiberoptic network having a plurality of interconnected nodes
2 with each node capable of selectively switching optical signals in a first wavelength
3 channel in an input fiber to any one of a plurality of wavelength channels and output
4 fibers, said fiberoptic network comprising
5 a control network having a reserved wavelength channel between the
6 interconnected nodes for carrying signaling and control signals for network restoration
7 and provisioning operations.

1 9. The fiberoptic network of claim 8 wherein said signaling and
2 control signals comprise Internet Protocol signals.